

The Effects of Gender on Perceptions of Team Twitter Feeds

Galen Clavio & Patrick Walsh, Indiana University
Pat Coyle, Coyle Media Group

Abstract

As social media use by professional sport teams continues to grow, understanding who is using these outlets is crucial in order to best communicate with users. What has yet to be thoroughly examined is gender differences in usage of team Twitter feeds. By surveying fans from a variety of teams, this study examined gender differences in ratings of informational, commercial, and social interactions with the team's Twitter feed, along with examining any demographic differences and usage of social-media enabled smartphones. Contrary to what previous research on sport media consumption would suggest, females rated nearly all Twitter functions at higher levels than did males, and were more active with smartphone usage while in attendance at games. These results point to a number of practical and theoretical implications, and to a new realization of the social media audience and female fan computer-mediated media usage in relation to professional sport teams.

Introduction

Social media continue to grow in both scope and societal importance, with social media's impact on sport being no exception to either condition. Social media applications such as Twitter and Facebook have become fully established in the realm of sport, and represent a key element of business and fandom for many stakeholders in the sport landscape. According to industry media outlet SportsBusiness Journal (Fisher, 2011), social media have proved to be "an effective tool to boost fan interaction, forge connections between teams and leagues and their fans, sell tickets and merchandise, and help drive TV viewership" (p. 1).

Although social media have collectively made an impact in the sports world, the most impactful of the services thus far has been Twitter, which veteran sportswriter Jon Wertheim (2011) recently called a "permanent part of the sports firmament" (p. 4). This microblogging, data-compacted service has only existed since 2006, but has grown in that time into the second-largest social media outlet in North America. Twitter's advantages over rival Facebook in the sports realm are numerous, including superior infrastructure for leagues, teams, and players to communicate and interact directly with fans, and early and aggressive adoption by several high-profile sports stars (Gregory, 2009).

An interesting aspect of Twitter as a communication medium for sports is that many of its demographic and usage trends skew towards female users. In recent demographic studies of Twitter (Skelton, 2012), women made up a majority of users (59%). The proportion of female users increased over the prior year, when females made up only 52% of the Twitter population (Gervai, 2011). Other studies into Twitter usage have found that women followed 2% more accounts on Twitter than men, while also generating 12% more tweets (Zarella, 2010).

As sports entities continue to expand and refine their social media presence, there are many questions regarding the true nature of the Twitter audience for sports, particularly in relation to gender. Do females and males utilize Twitter the same way for sports-related activities? If not, then what theoretical implications do these differences have? Women's overall share of the Twitter user base has increased year by year, a trend that combines with appreciable increases in women's share of the sports fan marketplace (Dosh, 2012; McBride, 2011). Therefore, it becomes important for both scholars and industry experts to examine the nature of the audience, to see what similarities, differences, and usage patterns exist for male and female Twitter users in the professional sports fanscape.

Review of Literature

While several studies have examined social media usage over the past five years, there has been a tendency among researchers to concentrate on social media users as a solid group, rather than evaluate them based upon individual demographic characteristics. Much of this can be attributed to the nascence of the field of study. However, as certain aspects of broad social media usage are added to the body of literature, it becomes important to evaluate the individual demographic characteristics of users, to determine whether those characteristics are influencing usage. The following literature review examines pertinent literature in the important areas surrounding the topic of sport social media usage. Specifically, literature on gender differences in fan behavior, sport media usage, and general social media use are examined in order to provide insight into any potential differences that may be found between the genders in regards to sport related twitter use.

Gender and fan behavior

A study by Dietz-Uhler, Harrick, End, and Jacquemotte (2000) examined differences and similarities among sport fans through the prism of gender, building off earlier work that highlighted observed differences between males and females in sport fan behavior engagement. The researchers did not find a statistically significant difference between females and males in term of self-perception of sport fandom. However, they did determine that males demonstrated significantly higher levels of sport fan identification than did females. Males also possessed significantly greater levels of knowledge and interest in sports, and spent more time discussing sports and watching sports on television, than did females. The authors also found that females attributed their sports fandom to social reasons such as game attendance, cheering, and viewing or watching sports with friends. By contrast, males reported being sports fans because of having played sports or possessing general affinity for sports, and "seem to enjoy acquiring information about sports through such means as reading the sports page" (p. 225).

Fink, Trail, and Anderson (2002a) examined sport consumption behavior and spectator attendance through the lens of gender. The study found that males utilized print media to acquire information on their teams more than did females. Males also were found to track statistics more frequently than females. Females were found to purchase more merchandise to males.

In a related study, Fink, Trail, and Anderson (2002b) examined motives for team identification in relation to college basketball audiences. In examining the differences between genders, they found that significant amounts of variance in team identification were explained in women by vicarious achievement, aesthetics, and drama. Men's identification also saw significant variance

achieved by vicarious achievement, albeit much less than females, and aesthetics. Additionally, variance was explained in men's team identification by knowledge acquisition and social interaction.

In an examination of spectator motivations for Mixed Martial Arts (MMA), Andrew, Kim, O'Neal, Greenwell, and James (2009) evaluated several motives of MMA consumption, and included gender as a variable of analysis. Both male and female respondents were found to consume MMA media for the purposes of aesthetics, drama, and knowledge, with males also found to consume MMA media for purposes of violence. Additionally, males were found to be significantly more likely to attend MMA events based on vicarious achievement.

Gender and media use

A study by Jackson, Ervin, Gardner and Schmitt (2001) examined email and Internet usage among college-age students. The results from the study found that males utilized the Internet significantly more than did females, and that females suffered from higher levels of computer anxiety and lower levels of computer self-efficacy. This lack of self-efficacy was also found in later research (e.g., Hargittai & Shafer, 2006). Females were seen as more likely to use the Internet to communicate with others interpersonally, while males were more likely to utilize the Internet for information and task-focused items. It is important to note that the study focused on an existent gender gap in Internet use at the time, which does not appear to exist in North American social media at the present.

In regards to female usage focusing on communication and socialization, a similar pattern was seen in Leung (2001), who examined the chat application ICQ, an early interactive software tool. The author found that females on ICQ focused their behavior on sociability, while males focused primarily on relaxation and entertainment. Results also indicated that females spent more time on the service as compared to males, both in terms of single-session and session frequency.

Manago, Graham, Greenfield, and Salimkhan (2008) conducted a series of focus groups to explore general, social, and gendered self-presentation on MySpace, a social medium which was popular in the 2000s and which shares some similarities with Twitter. Gendered self-presentation was the least common of the presentation types discussed; however, results indicated that "gender role constructions on MySpace seem to correspond to gender role constructions in mainstream U.S. culture: females as affiliative and attractive, males as strong and powerful" (p. 455). The authors noted that users were likely carrying their own behavioral and social norms from the offline world into the online world.

Raacke and Bonds-Raacke (2008) examined users and nonusers of MySpace and Facebook from a uses and gratifications perspective. Statistical evaluation of the sample found that men were significantly more likely to log into their social media accounts more frequently than were women, and were more likely to have more linked friends to their accounts than were women. Women were more likely to change the appearance of their social networking site than were men, and were more likely to set their site to a "private" setting than were men. Additionally, contingency table analysis determined that men were more likely than women to use social networking sites to learn about events. However, an analysis revealed that gender did not have an effect on the feelings, positive or negative, generated by reception of new messages on social networking sites.

Haferkamp, Eimler, Papadakis, and Kruck (2012) extended the examination of gender differences in social media, by evaluating self-presentation differences on social networking sites. Somewhat surprisingly, results showed that males placed higher priorities on relationship-seeking than did females, and that females scored higher for the motive of entertainment than did males. Females were also more likely to view others' social networking profiles to gain information about these individuals than were men. Haferkamp et al. felt that men's priorities as revealed in the study indicated that males viewed social networks pragmatically, as a medium through which to connect with people, while females viewed social networks in a more self-presentational and hedonistic manner.

Sport and social media

In one of the few studies that looked specifically at gender differences in sport social media usage, Clavio and Kian (2010) examined the motivations of users to follow a retired female golf star on Twitter. Results indicated that men were more likely to follow the athlete because they perceived her to be physically attractive. Women were significantly more likely than men to follow the athlete for purposes of information uniqueness, enjoyment of writing content, prior commercial purchase of the athlete's product, and having followed the athlete's career. Despite the gender of the athlete, men comprised a majority of the Twitter followers who participated in the study.

One issue with existing scholarly inquiry into sport and social media is the relatively sparse numbers of females in examined populations and samples. For instance, Schultz and Sheffer (2010) evaluated the utilization of Twitter by a specific group of sport stakeholders – in this case, sports journalists – and determine the potential impact of the medium on the reporting of sport. In relation to gender, the sample of the study was almost entirely male (94%). A follow-up study to the above (Sheffer & Schultz, 2010) found that the demographics of the studied sample were just as skewed gender-wise, with only 7.4% of observed journalists being female. The lack of representation of females in sport-related social media has been consistent across many scholarly investigations of sport users, including those of blogs (Frederick, Clavio, Burch, & Zimmerman, 2012), online fantasy sport users (Ruhley & Hardin, 2011), and message boards (Clavio, 2008). This lack of female attendance on sport sites aligns with prior research, which found that females were less likely than males to use Internet sites focused on sport, as well as humor and gaming (Mitra, Willyard, Platt, & Parsons, 2005).

Purpose, Hypotheses, and Research Questions

While numerous studies have examined gender differences in sport fan behavior and media usage, knowledge regarding gender differences in sport Twitter usage is limited to one study which examined a retired professional athlete's Twitter feed (Clavio & Kian, 2010). While this previous study provides a solid foundation, gender was not its primary focus, and more research is needed in that area. In particular, while sport teams continue to utilize Twitter as a means of communicating with fans, no research to date has examined the nature of the team sport Twitter audience and differences in usage between the genders. Therefore, the purpose of this study was to ascertain whether differences existed between males and females in relation to sport social media utilization, with a focus on the social medium of Twitter. Based on prior research (Fink et al., 2002b; Haferkamp et al., 2012; Jackson et al., 2001; Leung, 2001) which has shown that males are more apt to utilize sport media for informational and for functional or pragmatic reasons than are females, and that females are more likely to consume sport and related media

for social and self-presentation purposes (Dietz-Uhler et al., 2000; Haferkamp et al., 2012; Hargittai & Shafer, 2006; Leung, 2001), the following hypotheses are proposed:

H1: Male sport fans will rate informational functions of their team's official Twitter feed higher than will female sport fans.

H2: Male sport fans will rate commercial functions of their team's official Twitter feed higher than will female sport fans.

H3: Female sport fans will rate social interactions with their team's official Twitter feed more highly than will male sport fans.

In these hypotheses informational functions refers to gathering news, videos, and other team related items, commercial functions are items such as contests, special promotions, deals, etc., and social interactions relate to one's likelihood of tweeting, re-tweeting, and engaging in community interaction. Two research questions were also asked, in order to expand the body of knowledge on this topic and further explore the sample queried. As little is known regarding sport Twitter users' characteristics, any demographic differences between males and females will be noted. In addition, as many teams are attempting to directly engage with fans that are in attendance at a game (e.g., in-arena text promotions, photo contests, voting on songs to play during breaks) through Twitter and smartphone applications, gender differences in smartphone usage at stadiums will be examined. The specific research questions are as follows:

RQ1: Are there demographic differences between male and female social media users in sport?

RQ2: Do male and female social media users in sport utilize social media-enabled smartphones differently when in attendance at a sporting event?

Methodology

This study utilized survey methodology, a popular form of Internet inquiry which has been used many times in past research on gender, sport, and media (e.g., Clavio & Kian, 2010; Dietz-Uhler et al., 2000; Fink et al., 2002a; Fink et al., 2002b; Haferkamp et al., 2012; Jackson et al., 2001; Raacke & Bonds-Raacke, 2008).

Instrumentation

Survey questions were arrived at through a combination of a thorough review of previous literature and initial empirical observation of several professional teams' Twitter feeds, to evaluate the content being included by those teams. Following this process, a panel of industry experts further vetted the questions, to help ensure validity. Finally, scholars familiar with social media in sport were asked to evaluate the questions asked, and provide any suggested changes.

The first part of the survey focused on user perceptions of informational and commercial usage of team Twitter feeds, and consisted of 12 overall questions split into two subscales. The first subscale focused on informational usages, consisting of seven items, and each question was measured with a 5-point Likert-type scale, anchored by Not at All Appealing (1) and Highly Appealing (5). The seven items that fans were asked to rate were as follows: *In-game Updates*; *Latest Team Photos*; *Latest Team News*; *Latest Team Videos*; *News on Individual Players*; *Results of Team Games*; and *Team Insider News That I Can't Get Anywhere Else*. The second subscale focused on commercial usages of the team Twitter feeds, and each question was

measured on the same 5-point scale as shown above. This subscale was comprised of five items, including *Contests, Giveaways, and Prizes; Exclusive Deals or Offers From The Team; Service, Support, or Product News From The Team; Special Offers From Team Sponsors; and Ticket Promotions and/or Discount Offers on Tickets.*

The next part of the survey focused on the user's social interaction with the team Twitter feeds, and consisted of three questions, which were measured with a 5-point Likert-type scale, anchored by Not At All Likely (1) and Extremely Likely (5). Users were asked to rate their likelihood of doing each of the following: *Reply to team's tweets, Retweet team's tweets, and Post thoughts and include team or team-related Twitter hashtag.* The reason for the language change in the instrument (i.e., from *appealing to likely*) is due to the differing nature of the two areas. Whereas the variables relating to informational and commercial usages require only consumption on the part of the user, the variables relating to socialization requires action and/or content creation on the part of the user. All scale survey items within were randomized within the survey software to avoid bias.

Following the scale questions, respondents were asked to identify their gender, their marital status, their age, their household income, and whether they had any children under the age of 18 living in their household. Also examined was the concept of team identification, in order to provide data comparisons with Dietz-Uhler et al. (2000). Team identification was measured with items utilized in previous literature which has assessed one's identification with a particular team (James & Ross, 2002; Trail & James, 2001; Trail, Anderson, & Fink, 2005; Ross, Russell, & Bang, 2008; Walsh & Ross, 2010). Specifically, four items, which were measured with a 5-point Likert-scale anchored by Disagree (1) and Agree (5), assessed the participant's ownership (The *<insert team name>* are my team), loyalty (I consider myself to be a loyal fan of the *<insert team name>*), importance (Supporting the *<insert team name>* is very important to me), and pride associated with the team (I want others to know that I am a fan of the *<insert team name>*). The above questions allowed for examination of RQ1.

For RQ2, the aim of the researchers was to ascertain how sports fans were utilizing their social media-enabled smartphones when the device was the sole portal for user social media activity (such as in a stadium environment), as opposed to general smartphone use, which could be affected by the presence of other Internet-enabled devices (such as in the home). In a similar process to the one highlighted above, the questions involving smartphone usage were derived from a thorough review of existing scholarly and popular literature, and combined with input from industry professionals in sport and communication specialists in academia. The resulting scale consisted of 13 questions, each measured by a 5-point Likert-type scale, anchored by Not at all Likely (1) and Extremely Likely (5). The wording of the question was "When you attend sporting events, how likely are you to use your smartphone for any of the following activities?", with the individual items as follows: *Check/update Facebook, Check/update Twitter, Gain Entry with E-Tickets, Participate in In-Stadium Promotion via Team App, Participate in In-Stadium Promotion via Text, Read Fantasy Updates, Record Video, Send or Receive E-mail, Send or Receive Text Messages, Send or Share Photos to Friends, Take Photos, Talk with Friends or Family, and Watch Video Highlights.*

Once the survey was constructed, links were distributed by a social media data collecting firm to seven North American professional sports teams who had agreed to post the survey on their Twitter feeds. These seven teams included the following: an NFL team in the southeastern United States (Team A), an NFL team in the northeastern United States (Team B), an NHL team in the western United States (Team C), an NHL team in the eastern United States (Team

D), an NHL team in the northern United States (Team E), an NBA team in the Midwestern United States (Team F), and an NBA team in the western United States (Team G). Each team's survey results were gathered in its own distinct collector, and then combined together after the fact for the purposes of data analysis. Data were collected in a one week period of time, from November 7-14, 2011.

Data analysis

Due to the dichotomous nature of the dependent variable of gender, it was decided that the utilization of independent samples *t*-tests was the most appropriate statistical analysis for H1-H3, as well as for the two research questions. In addition, to address RQ1, frequency analyses were performed on the demographic questions, and *t*-tests were performed on the smartphone usage questions to examine RQ2.

Results

The survey yielded an *N* of 2,137 responses. Team G's collector was excluded due to an abnormally low response number ($n = 31$). After removing respondents who did not identify gender, the total sample was reduced to $n = 1,726$. Six of the team collectors' responses were retained for data analysis, and those samples ranged from $n = 236$ (13.6%) to $n = 365$ (21.1%). Respondents from the remaining NBA team comprised 15.9% of the total sample, while respondents from the two NFL teams (30.1%, 520) and three NHL teams (54%, 934) rounded out the remainder.

In terms of gender, females made up 34.6% of the sample ($n = 599$), while males comprised 65.4%. The median age group of the sample was 25-34 ($n = 602$, 34.8%), with 81.2% of the sample identifying themselves as between 18-44 years of age. Over 60% of the sample identified themselves as single, while 37.8% identified themselves as married. When asked whether there were children under the age of 18 in the household, the majority (70.4%) answered negatively. When asked about combined annual household income, 41.5% of respondents indicated they earn less than \$60,000 per year, while 32.7% answered that they earn \$100,000 or more per year.

Hypothesis 1

H1 stated that males would rate informational functions of their teams' Twitter feeds higher than would females. Utilizing the first subscale highlighted in the methodology, a series of independent samples *t*-tests were conducted, with the full results visible in Table 1. Females rated the associated functions significantly higher on six of the seven items which comprised the informational subscale. For example, females rated team Twitter updates relating to results of games ($M = 4.49$) higher than did males ($M = 4.14$), as well as Twitter updates containing the latest team photos (female $M = 4.20$; male $M = 3.76$). Based on these results, H1 was not supported.

Table 1
Means, Standard Deviations, and *t*-Test results for Informational and Commercial functions of team Twitter feed as measured by gender of respondent

	Females		Males		<i>t</i> (1727)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Information					
In-game Updates	4.31	.94	4.02	1.15	5.46***
Latest Photos	4.20	.99	3.76	1.11	8.28***
Latest Team News	4.56	.67	4.44	.81	3.19***
Latest Videos	4.04	1.04	3.78	1.12	4.72***
News on Individual Players	4.48	.80	4.31	.87	3.97*
Results of Games	4.49	.86	4.14	1.09	6.79***
Team Insider News	4.49	.88	4.40	.93	1.80
Commercial					
Contests, Giveaways, and Prizes	4.12	1.05	3.75	1.23	6.26***
Exclusive deals or offers	3.94	1.10	3.68	1.23	4.33***
Service, support, or product news	3.62	1.13	3.35	1.18	4.72
Special offers from team sponsors	3.15	1.29	2.78	1.32	5.58
Ticket promotions and discounts	3.97	1.14	3.65	1.31	5.15***

NOTE. * $p < .05$. ** $p < .01$. *** $p < .001$.

Hypothesis 2

H2 anticipated that males would rate commercial functions of their teams' Twitter feeds higher than would females. This hypothesis was tested utilizing the second subscale highlighted in the methodology, through a series of independent samples *t*-tests, with the results visible in Table 1. Females were found to rate the commercial functions significantly higher on three of the five items included in the subscale. Of particular note was females rating Twitter updates relating to contests, giveaways, and prizes ($M = 4.12$) more highly than males ($M = 3.75$). As a result, H2 was not supported.

Hypothesis 3

H3 stated that females would rate social interactions with their teams' Twitter feeds higher than would males. Utilizing the three Twitter social interaction questions, independent samples *t*-Tests were utilized, with the results shown in Table 2. Females were shown to be significantly more likely to reply to team tweets ($M = 3.24$) than were males ($M = 3.03$); however, the other two variables, while higher for females than males, demonstrated no statistical significance. H3 was moderately supported.

Table 2
Means, Standard Deviations, and *t*-Test results for Social Interactions with team Twitter feed as measured by gender of respondent

	Females		Males		<i>t</i> (1727)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Socialization					
Post thoughts and include team or related hashtag	3.63	1.41	3.23	1.45	5.60
Reply to team tweets	3.24	1.41	3.03	1.37	3.00*
Retweet team tweets	3.59	1.34	3.15	1.40	6.32

NOTE. * $p < .05$.

Research Question 1

The purpose of RQ1 was to see if any significant demographic differences existed between the males and females in the sample. A series of independent samples *t*-tests were performed on the demographic variables highlighted earlier in the results section. There was no significant difference found for the variable of household income. Females were significantly more likely to be single than were males, $t(1727) = -6.13$, $p < 0.01$, and were significantly less likely to have children under the age of 18 in their household, $t(1727) = 4.61$, $p < 0.01$. Females ($M = 3.12$, $SD = 1.24$) were also significantly more likely to be younger than males ($M = 3.17$, $SD = 1.12$), $t(1727) = -.79$, $p < 0.01$, although the difference appeared negligible. Team identification was also evaluated, by combining the four question scale noted in the methodology section and then summing and averaging the results. An independent samples *t*-test found no significant difference between females ($M = 4.61$, $SD = .66$) and males ($M = 4.59$, $SD = .72$).

Research Question 2

RQ2 asked whether males and females were utilizing their social media enabled smartphones differently in a sport stadium environment. Only responses of those who possessed a smartphone were included, yielding a total subsample of 1,460. The results of this analysis may be found in Table 3. Males were found to be significantly more likely to engage in in-stadium smartphone usage to read fantasy sports updates, $t(1460) = -7.79$, $p < .001$. Females were found to be significantly more likely to engage in a wide variety of smartphone usages, including Facebook and Twitter, text messaging, and taking of photos.

Discussion

The perception of a digital divide relating to new and social media use and gender has been widely accepted since first detected at the turn of the 21st century (e.g., Jackson et al., 2001; Leung, 2001). Furthermore, a perception of differences in fan identification and interest in sports (Dietz-Uhler et al., 2000) has existed throughout much of the same time period. This study's findings are therefore surprising, and point to a possible realignment of both the social media audience and the concept of computer-mediated female fan interest.

Several differences emerged from the data analysis, with the first being the relatively high percentage of females who comprised the sample. Although females made up a little more than one-third of the sample, this still stands as a much larger proportion of the total than has been found in prior investigations of sport social media usage (e.g., Clavio, 2008; Frederick et al., 2012; Ruihley & Hardin, 2011; Schultz & Sheffer, 2010; Sheffer & Schultz, 2010). The number of females is slightly less than was found in Clavio & Kian (2010), although it should be noted that the subject of that study was the Twitter account of a popular retired female athlete, where a larger proportion of female followers might be found. This study's sample was drawn from the social media fan bases of six North American professional sports teams, all of which are male sports.

Table 3
Means, Standard Deviations, and t-Test results for in-stadium smartphone usage as measured by gender of respondent

	Females		Males		t(1459)
	M	SD	M	SD	
Check / Update Facebook	3.77	1.49	3.35	1.56	4.96**
Check / Update Twitter	4.37	1.06	4.07	1.21	4.72**
Gain Entry with E-Tickets	2.95	1.47	2.94	1.42	.091
Participate in in-stadium promotion via team app	3.44	1.43	3.14	1.43	3.83
Participate in in-stadium promotion via text	3.64	1.37	3.28	1.42	4.62
Read fantasy updates	2.09	1.44	2.76	1.62	-7.79***
Record Video	3.23	1.41	3.22	1.39	.15
Send or receive email	3.67	1.35	3.48	1.41	2.45*
Send or receive text messages	4.56	.84	4.36	.98	3.95***
Send or share photos to friends	4.31	1.03	3.98	1.20	5.14**
Take photos	4.56	.83	4.35	.95	4.14***
Talk with friends or family	3.90	1.21	3.75	1.22	2.32
Watch Video Highlights	2.75	1.39	2.64	1.39	1.44

NOTE. * $p < .05$. ** $p < .01$. *** $p < .001$.

Perhaps the most interesting finding was the consistently higher ratings from female sport social media fans across nearly all variables. While it is important to note that both females and males rated items highly, the female responses rated nearly everything higher than males, the lone exception coming in one smartphone usage variable. More importantly, the results stand in contrast to two of the hypotheses and their underlying literature.

Males being more interested in informational elements of media usage has been established over a variety of studies (e.g., Dietz-Uhler, 2000; Fink et al., 2002b; Haferkamp et al., 2012; Jackson et al., 2001; Leung, 2001). However, in this study, females rated all informational functions of the team Twitter feeds more highly than males, and highly overall, with none of the functions receiving a mean rating of less than 4.04. These findings do not just highlight a group of female sport social media fans who are more positive about informational functions than males, but also a group of females who have a very high overall interest in informational elements regardless of comparison to males.

One possible explanation for difference between these findings and prior media studies may be that the informational functions on sport Twitter feeds are perceived by females to be modified by the overall social aspects of Twitter. In other words, although the functions are themselves informational, the context of the functions is perceived by females as more socialized, and therefore more enjoyable. This explanation would also make sense of the findings of H2, which saw commercial elements of the Twitter feeds, another area where males have been found to rate media functions more highly, align instead with the findings of H1 in terms of females rating more highly than males. This does make the findings of H3 a bit puzzling, since the three variables related to socialization were not rated as highly as were the variables relating to information and commerce by either gender, and there was only one statistically significant difference among those variables. However, it is possible that the perceptions of the team Twitter feeds' focused socialization efforts are what is being rated, rather than the actual act of socialization. If the team Twitter feeds are not actively encouraging socialization, this may have an effect on user perceptions therein. Further investigation is needed into user perceptions of socialization efforts in order to construct more detailed analysis. It is also possible, in relation to

H3, that the differences in wording related to content consumption versus content creation are the genesis of the lower mean scores.

The demographic findings from the study are interesting in their similarities as much as their differences. The most surprising finding indicated that females and males demonstrated no significant difference in terms of team identification, and both genders reported extremely high levels of team identification. This could indicate that female sport social media fans are simply a more highly identified group of fan than random female sports fans drawn from the entire team fan population. It is not known whether that is due to these females being drawn to the teams' Twitter feeds by already-existent levels of fandom, or due to these females developing higher levels of team identification as a result of utilizing the teams' Twitter feeds. Regardless, these findings indicate that sports teams may have a large reservoir of highly identified female fans among their social media roles, and this group may be marketed to and communicated with in a way that is similar to male fans. Concerns that females view their teams (and sport) differently than males may not be valid in the social media sphere. The comparatively high mean scores for both genders found in the results for H1, H2, and H3 bear this out as well.

The results of the smartphone usage questions provide more intriguing findings, and again point towards a sport social media audience where females are the more active group of users. Whereas the questions relating to H1 and H2 focused on passive consumption of content, these questions focused on active uses of the smartphone in the stadium environment. Females were more likely to engage in socializing or communicative actions than males, including the usage of social media, texting, and photos. In the cases where there was no significant difference between the genders, the means were understandable for the variables in question. For instance, it was not surprising that gaining entry with E-tickets was rated low by both genders, since this is still not a widely accepted practice. Interestingly, both genders were more likely to record their own video in-stadium than they were to watch video highlights. The one area where males were more likely to engage in an activity was with the reading of fantasy updates while in-stadium, a finding which highlights the gender divide present in relation to fantasy sports (Berr, 2009; Lee, Kwak, Lim, Pedersen, & Miloch, 2011; Ruyhley & Hardin, 2011).

The scholarly implications of this study affect the way we view female interaction with both social media and with sport fandom. The results stand in contrast to the recent findings of Haferkamp et al. (2012), who posited that males viewed social media more pragmatically than did females. This study revealed much the opposite, with females rating pragmatic and systematic functions of both Twitter and smartphones more highly than males in nearly all cases. The opposite direction of the findings to the proposed H1 and H2 indicates a potential sea change in the theoretical interpretation of females as an audience, at least in the realm of sport communication and social media. These findings also highlight the need to establish gender as an important component of scholarly analysis and discussion of social media, rather than treating it as an ancillary demographic variable.

The practical implications of this study are numerous, in that sports teams and sport media outlets must now consider their female social media audiences as equally viable to males in terms of fan identification, functional Twitter perception, and overall smartphone usage in-stadium. While there has been a trend in recent years to create separate informational (McBride, 2011) and commercial (Dosh, 2012) sport content streams for females, the results of this study point towards a more even landscape within the world of Twitter followers, one where women are just as big of fans as are men, and are the more active and interested of the two genders in the functions currently associated with team Twitter usage.

Limitations and future research

This study's primary limitation is that it is not a random sample, as respondents were drawn from survey links posted on teams willing to take part in the survey. As such, the results may not be generalizable outside of these particular fans. While the survey links were active for a week, not all fans who follow the teams on Twitter may have seen the link and had the option of participating. This is a flaw in social media research that is not limited to this investigation of users. This study is also limited by the accessible and portable nature of Web links. Although the links were posted on each team's Twitter feed, it cannot be said with certainty that the link was not retweeted or forwarded to Twitter users who are not followers of the teams in question.

There are a variety of avenues for future research stemming from this article. It is important to investigate other social media, to see if the findings from this study are similar for services such as Facebook. Additionally, it would be advisable for scholars to investigate fans of collegiate sports, to see if similar trends emerge in relation to female fans and social media usage. It is also advisable that qualitative research be undertaken with both female and male Twitter fans, to delve more specifically into their reasons for using Twitter for sports fandom, and develop additional questions relating to social media use as affected by gender. Finally, a content analysis of sport teams' and their targeted usage of messages on Twitter would be worthwhile from a scholarly perspective, to see if methods of agenda setting and framing undertaken by teams appear to be directed towards one gender or the other.

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